USER'S MANUAL

ON-LINE 1K/2K/3KVA
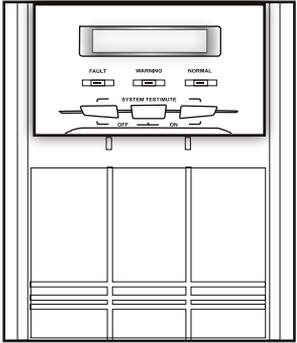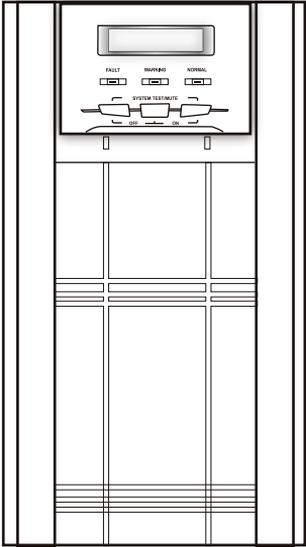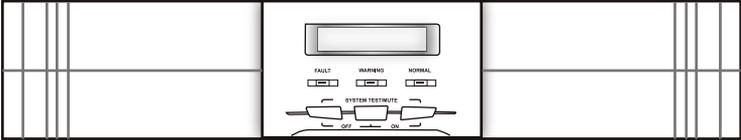
CONTENTS

1.INTRODUCTION

1.1 General Description

The continuity of electrical power is an essential requirement for critical load operations .The Uninterruptible Power System (UPS) is designed to meet the user's need of present computer, server and the equipment of office automation that make the UPS more compact and less noisy.

To choose the UPS as your equipment protector is a wise investment because it supplies reliable, pure and stable power at affordable price.

1.2 Key features

1. Multiple microprocessor and double-conversion design base.
2. Wide input range designed to operate under harsh environment.
3. High input power factor and DC-start function.
4. LED and LCD display for detail status and data; real-time alarm silence.
5. Enhanced protections against light, surges, and disturbance etc.
6. Remote monitoring with SNMP intelligent slot and RS-232 interface.
7. Light weight and compact size, easy to transport and place.

1.3 Important Notices

To be sure that the UPS will be operated correctly, the following items should be noticed:

1. Read instructions carefully before operating the UPS.
2. UPS power connect instruction should be followed.
3. Please don't open the case to prevent danger.
   4. If the UPS will be stored for long period, the battery must be charged once every 90 days.
5. Retain the load within the rating of UPS to prevent faults.
6. Handle unusual events according to the trouble-shooting guide.
7. Keep the UPS clean and dry.

2.SAFTY INSTRUCTION

2.1 Transporting

1. Disconnect all power cables if necessary.
2. Be careful not to damage the UPS while transporting.
3. Don't move the UPS upside down.
   4. Please transport the UPS system only in the original packaging (to protect against shock and impact).

2.2 Positioning

1.Do not put the UPS on rugged or declined surface.
2.Do not install the UPS system near water or in damp environments.

3.Do not install the UPS system where it would be exposed to direct sunlight or near heat.

4.Do not block off ventilation openings in the UPS system's housing and don't leave objects on the top of the UPS.

2.Allow a minimum distance of 10 cm in the rear and two sides of the UPS for ventilation.

4.Keep the UPS far away from heat emitting sources.

6.Do not expose it to corrosive gas.

7.Ambient temperature : 0℃ - 40℃

2.3 Installation

1. Connect the UPS system only to an earthed shockproof socket outlet.

2. Do not connect domestic appliances such as hair dryers or office equipment which would overload the UPS system (e.g. laser printers) to UPS output sockets.

3. Place cables in such a way that no one can step on or trip over them.

2.4 Operation

1. Do not disconnect the mains cable on the UPS system or the building wiring socket outlet during operations since this would cancel the protective earthing of the UPS system and of all connected loads.

2. The UPS has its own internal power source (batteries). The output terminals may be live even when the UPS is not connected to the AC supply.

3. Ensure that no fluids or other foreign objects can enter the UPS system.

2.5 Maintenance and Service

1. Caution - risk of electric shock.

Even after the unit is disconnected from the mains power supply (building wiring socket outlet), components inside the UPS system are still connected to the battery and are still electrically live and dangerous. Before carrying out any kind of servicing and/or maintenance, disconnect the batteries and verify that no current is present.

2. Only persons adequately familiar with batteries and with the required precautionary measures may exchange batteries and supervise operations. Unauthorised persons must be kept well away from the batteries.

3. Batteries may cause electric shock and have a high short-circuit current.

Please take the precautionary measures specified below and

any other measures necessary when working with batteries:

    - remove wristwatches, rings and other metal objects

    - use only tools with insulated grips and handles.

4. When changing batteries, install the same number and same type of batteries.

5. Do not attempt to dispose of batteries by burning them. This could cause battery explosion.

6. Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes.

3.SYSTEM DESCRIPTION
3.1LCD Front Panel
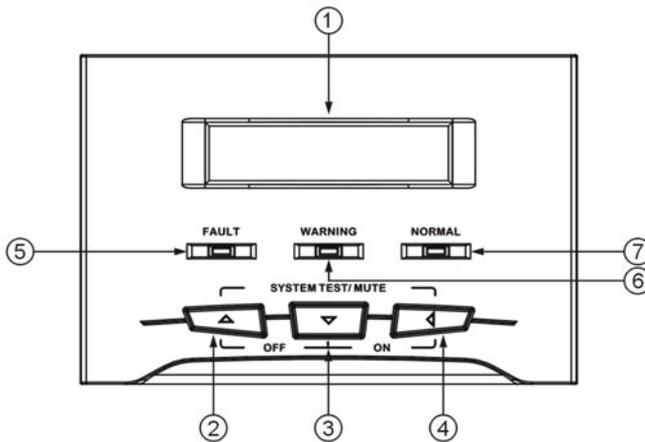
1. LCD Display: This indicates the UPS operation information, including UPS status, input/output voltage, input/output frequency, battery voltage, battery capacity left, output load, inside temperature, and the times of history events.

2. LCD Select Up-key: It is pressed to select upward the UPS status on LCD Display.

3. LCD Select Down-key: It is pressed to select downward the UPS status on LCD Display.

4. Control Key: When this key is pressed with the LCD Select Down-key simultaneously for 3 seconds, the UPS will be switched on after two beeps. Similarly, when UPS is in operation press this key and the LCD Select Up-key for 3 seconds, the UPS will be switched off after two beeps. Beside, in battery operation mode, press both of this key and LCD Select Up-key at the same time to disable the buzzer.

5. Fault LED (red): To indicate the UPS is in fault condition because of inverter shutdown or over-temperature.

6. Warning LED (yellow): To indicate the UPS is in the status of overload, bypass and battery back-up.

7. Normal LED (green): To indicate the UPS is operating normally.

LED Front Panel
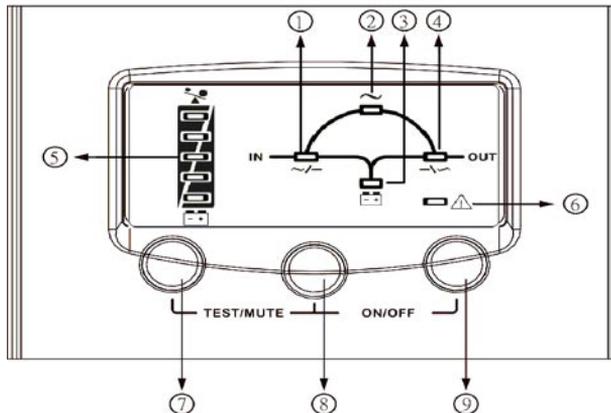
1. **Line LED (green):** AC power input。
2. **Bypass LED (yellow):**Bypass。
3. **Battery LED (yellow):**Battery back-up。
4. **Inverter LED (green):**Inverter Output。
5. **Load and Battery Capacity LEDs:**When AC normal indicates the load level, when battery mode indicates the battery level。

6. ⚠ **LED(red):**To indicate the UPS is in fault condition, please reset the UPS for checking again the UPS is operating normally。
7. **TEST/MUTE Key:** When AC normal, to push botton of ⑦、⑧ simultaneously for 3 seconds goes to battery mode for testing。
   When battery mode, to push botton of ⑦、⑧, simultaneously for 3 seconds goes to buzzer silent。
8. **Control Key:** To press the key of ⑦+⑧or ⑦+⑨, operate according to the function。
9. **On/Off Key:** To press the key of ⑧ & ⑨simultaneously for 3 seconds, the UPS will be switched on。 Similarly, when UPS is in operation press this two key for 3 seconds, the UPS will be switched off。

3.2 Outline Description

1KVA Tower Case

2KVA / 3KVA Tower Case

FRONT VIEW

SIDE VIEW

352 mm

200 mm

450 mm

BACK VIEW

1KVA / 2KVA / 3KVA Rack Mount Case

465mm

SIDE VIEW

440mm

88mm

FRONT VIEW

1KVA BACK VIEW

2KVA/3KVA BACK VIEW
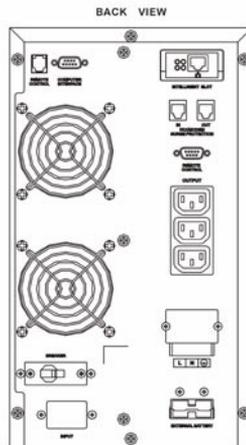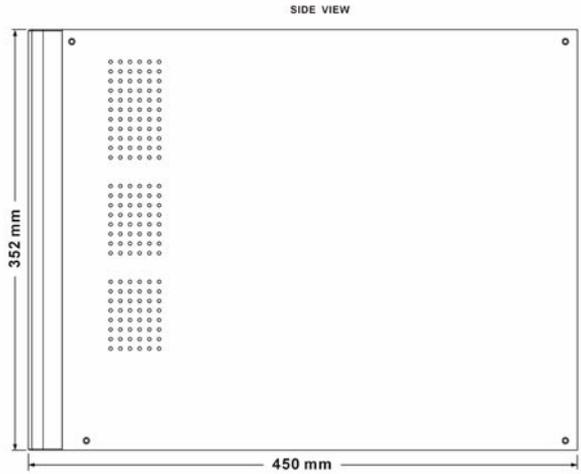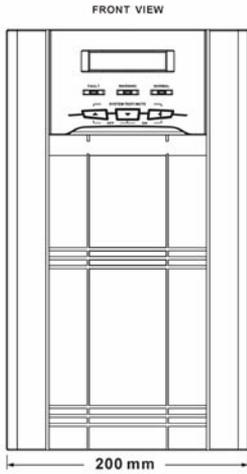
3.3 Back View Description

1KVA Tower Case

1. DB 9 (RS-232) Interface Port	6. Remote Control (Option for LED panel only)
2. SNMP Intelligent Slot (Option)	7. Fan
3. Fax / Modem (Surge Protection)	8. External Battery Socket
4. Remote Control (Detachable LCD Panel, Option)	9. Breaker
5. Output Socket (NEMA or IEC)	10. Input Socket
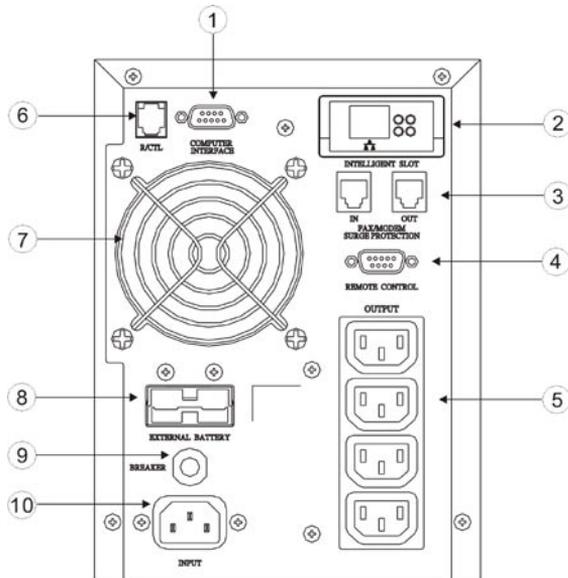
1KVA Rack Mount Case

1. Fax / Modem (Surge Protection)	6. SNMP Intelligent Slot (Option)
2. DB 9 (RS-232) Interface Port	7. Fan
3. Input Socket	8. Remote Control (Small LCD Panel, Option)
4. Remote Control (Detachable LCD Panel, Option)	9. Breaker
5. External Battery Socket	10. Output Socket (NEMA or IEC)

1KVA
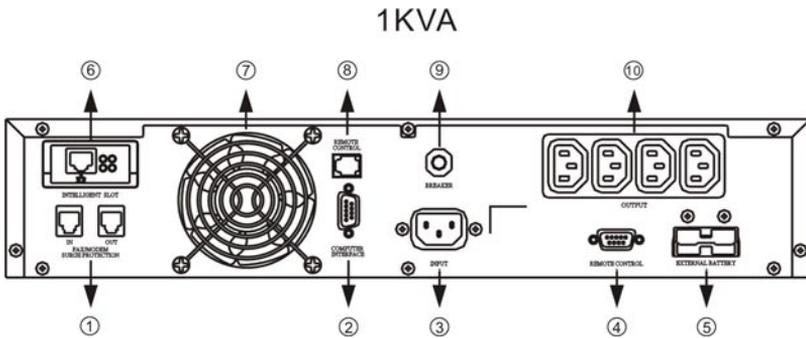
2KVA/3KVA Tower Case

1. DB 9 (RS-232) Interface Port	7. External Battery Socket
2. SNMP Intelligent Slot (Option)	8. Remote Control (Detachable Mini LCD Panel, Option)
3. Fax / Modem (Surge Protection)	9. Fan
4. Remote Control (Detachable LCD Panel, Option)	10. Breaker
5. Output Socket (NEMA or IEC)	11. Input Terminal
6. Output Terminal	
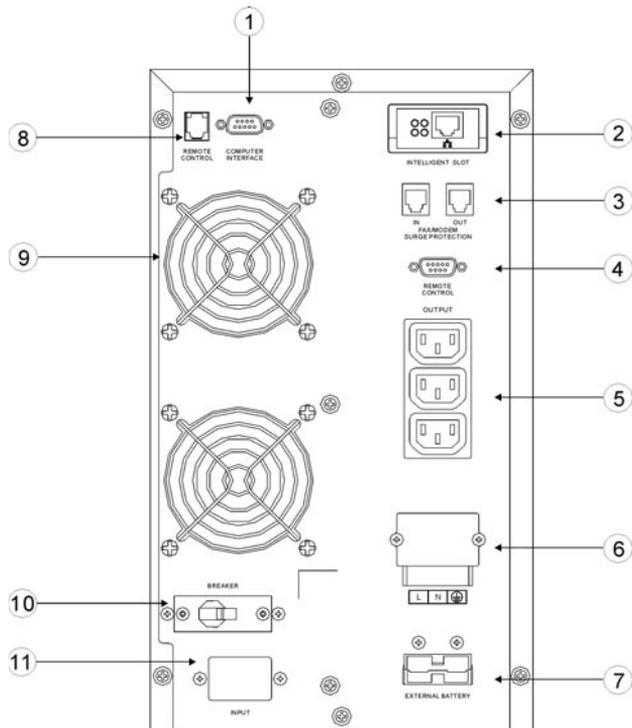
2KVA/3KVA Rack Mount Case

1. Input Socket	7. SNMP Intelligent Slot (Option)
2. Remote Control (Detachable LCD Panel, Option)	8. Fax / Modem (Surge Protection)
3. External Battery Socket	9. Output Socket (NEMA or IEC)
4. Output Terminal	10. Fan
5. DB 9 (RS-232) Interface Port	11. Remote Control (Small LCD Panel, Option)
6. Breaker	

2KVA / 3KVA
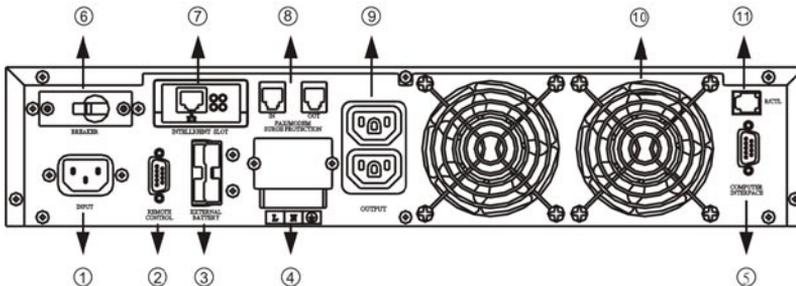
4.CABLE CONNECTION

4.1 Inspection

1. The system may be installed and wired only by qualified electricians in accordance with applicable safety regulations.

2. When installing the electrical wiring, please note the nominal amperage of your incoming feeder.

3. Inspect the packaging carton and its contents for damage. Please inform the transport agency immediately should you find signs of damage. Please keep the packaging in a safe place for future use.

4. Please ensure that the incoming feeder is isolated and secured to prevent it from being switched back on again.

4.2 Connection

1. UPS Input Connection

If the UPS is connected via the power cord, please use a proper socket with protection against electric current, and pay attention to the capacity of the socket.

2. UPS Output Connection

The output of this model is with socket-types only (NEMA or IEC). Simply plug the load power cord to the output sockets to complete connection.

5. OPERATION

5.1 Check Prior to Start Up

1. Ensure the UPS is in a suitable positioning.

2. Check input cord is secured.

3. Make sure the load is disconnected or in the "OFF" position.

4. Check if input voltage meets the UPS rating required.

5.2 Operation Procedure

Please follow the instructions below for the UPS operation.

1. Once the AC source is connected, the LCD Display shall light up immediately to display first the main menu of greeting context and the Normal LED is blinking to indicate ready to switch on the inverter.

2. By pressing the Control Key and the LCD Select Down-key simultaneously for 3 seconds, the UPS will start up after two beeps and Normal LED lights up to indicate the power is from its inverter to the load.

3. When the Control Key and the LCD Select Up-key are pressed simultaneously for 3 seconds, the inverter will be turned off after two beeps and the UPS is on the standby status (LCD display illuminates and Normal LED is blinking) until AC source is disconnected.
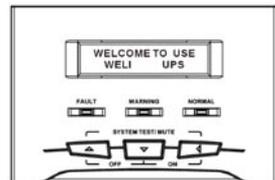
5.3 Storage Instruction

Disconnect input power in rear panel if you will not use it for long period. If the UPS is stored over 3 months, please keep supplying power to the UPS for at least 24 hours to ensure battery fully recharged.

5.4 LCD Display

Use Up/Down key to select menu-displays of the LCD described below. This screen will refresh once the system power is enabled.

1. Rated Spec Menu
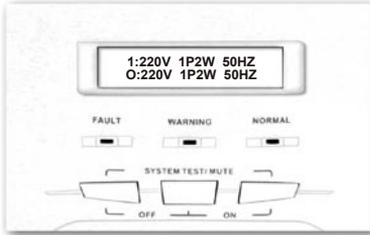
2. Status Menu
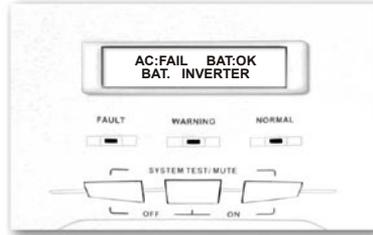
3. Voltage Menu
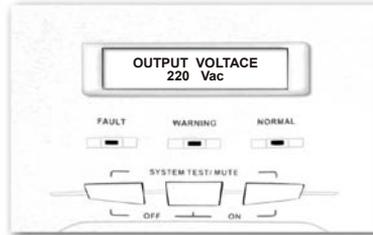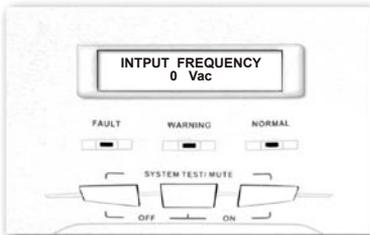
4. Frequency Menu

5.Battery Status Menu

BATTERY VOLTAGE
37 Vac

FAULT   WARNING   NORMAL

SYSTEM TEST/ MUTE

OFF   ON

BATTERY CAPACITY
100%

FAULT   WARNING   NORMAL

SYSTEM TEST/ MUTE

OFF   ON
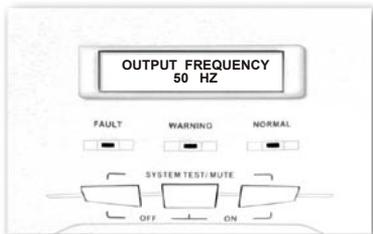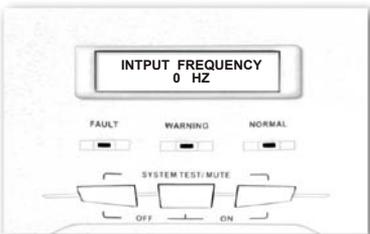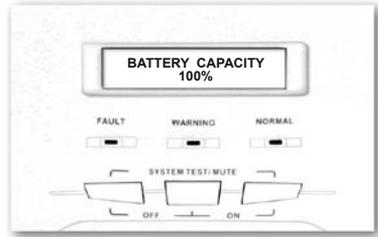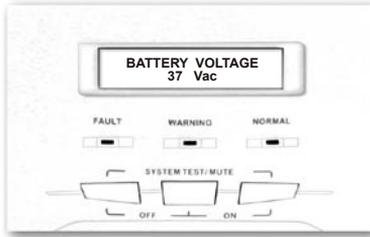
6.Output Power Menu   7.Temperature Menu

OUTPUT POWER
0%

FAULT   WARNING   NORMAL

SYSTEM TEST/ MUTE

OFF   ON

INSIDE   TEMP
33˚C   91˚

FAULT   WARNING   NORMAL

SYSTEM TEST/ MUTE

OFF   ON

8.History Record Menu

NEW >AC_FAIL:0
REC 0V_LOAD:0

FAULT   WARNING   NORMAL

SYSTEM TEST/ MUTE

OFF   ON

OLD >AC_FAIL:0
REC 0V_LOAD:0

FAULT   WARNING   NORMAL

SYSTEM TEST/ MUTE

OFF   ON
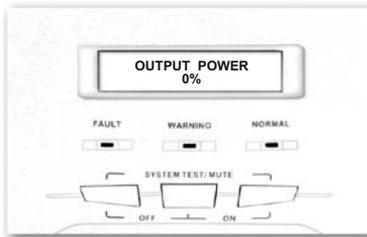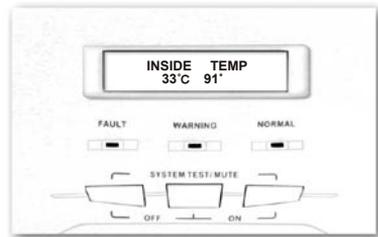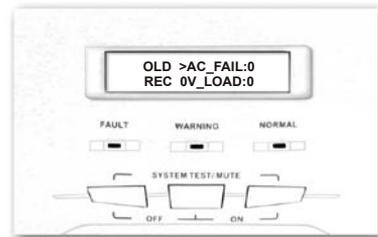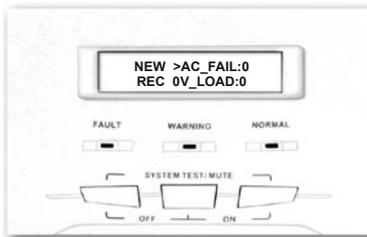
9.Bypass Range Set Menu

A. To protect the load, the function of bypass auto-transfer is activated only when the AC main voltage is within the range of LO (low) and HI(high). In this screen, press on/off Control Key to enter the following steps for LO/HI voltage setting.
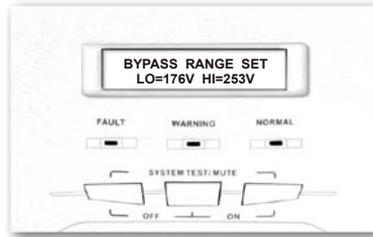
B. The cursor (→) will pop up to indicate the item newly selected. Press on/off Control Key to get the item of LO or HI range the user want to adjust.
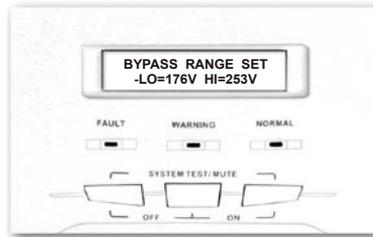
C. Use Up or Down-key to adjust the voltage (changing 1V by every press). LO (low rang):176V+/- 20V, HI(high range):253V+/- 20V).

D. Once the value is confirmed, press on/off Control Key again to save the data.
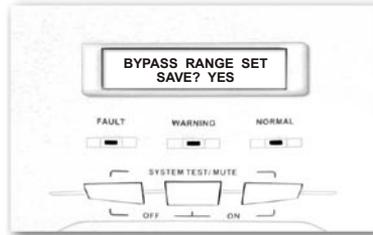
10.Output Voltage Set Menu

A. In this screen, press on/off Control Key to enter the following steps for output voltage setting.

O/P VOLTAGE SET
220V

FAULT   WARNING   NORMAL

SYSTEM TEST/ MUTE

OFF   ON
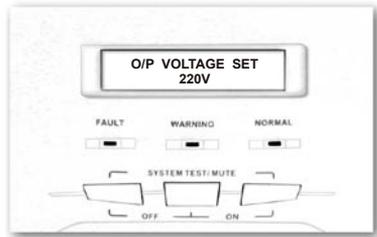
B. The cursor (→) will pop up to indicate the output voltage newly selected.
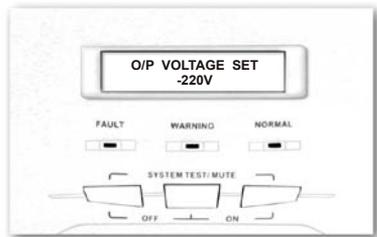
C. Use Up or Down-key to adjust the output voltage (220V, 230V, and 240V are available only).

O/P VOLTAGE SET
-220V

FAULT   WARNING   NORMAL

SYSTEM TEST/ MUTE

OFF   ON

D. Once the correct voltage is selected, press on/off Control Key again to save the data.

O/P VOLTAGE SET
SAVE? YES

FAULT   WARNING   NORMAL

SYSTEM TEST/ MUTE

OFF   ON
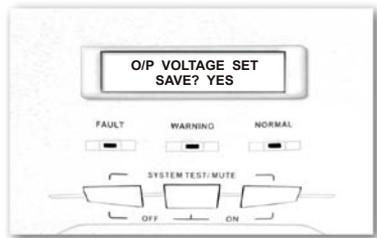
6. TROUBLE SHOOTING GUIDE

6.1 UPS Status and Action

The description of the following guideline may be helpful in problem solving.

1.LED and LCD status as below:
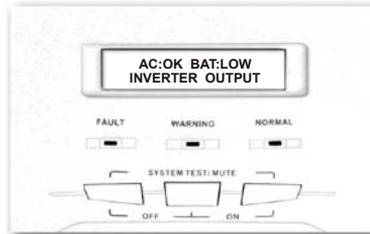
UPS STATUS:

AC utility power is normal. UPS is running normally, but battery capacity is low (referring to Battery Status Menu). Buzzer beeps once every second for battery low.

ACTION: Charger may broke down. Please replace charger board.

2.LED and LCD status as below:
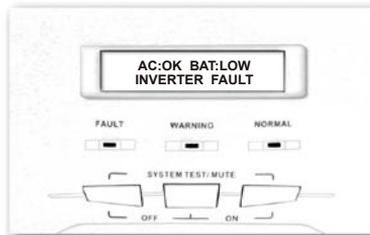
UPS STATUS:

AC utility power is normal. The output load is supplied through bypass of AC utility. Fault LED lits up and buzzer beeps continuously.

ACTION: Please contact your agent for service.

3.LED and LCD status as below:
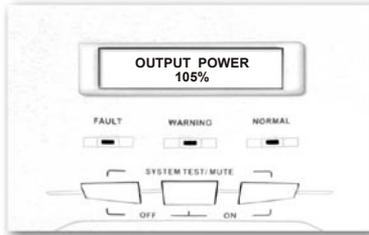
UPS STATUS:

AC utility power is normal but UPS is overloaded. Warning LED lits up and buzzer beeps per second.

ACTION: Please reduce the critical load to POWER(%)<100%.

4.LED and LCD status as below:
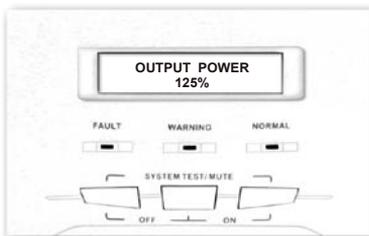
UPS STATUS:

AC utility power is normal but UPS is overloaded up to 125%. Warning LED does not fade out and buzzer beeps per 0.5 second.

ACTION: Please reduce the critical load to POWER(%)<100%.

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5.LED and LCD status as below:
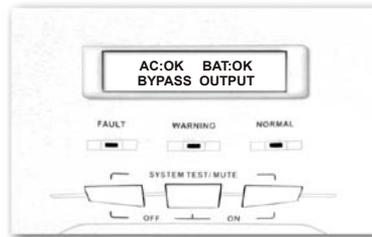
UPS STATUS:

AC utility power is normal, but the load is supplied by AC utility power via bypass. Output power is more than 150% (referring to the Output Power Menu). Warning LED lits up and buzzer beeps continuously.

ACTION: Please reduce the critical load to POWER(%)<100%.

6.LED and LCD status as below:
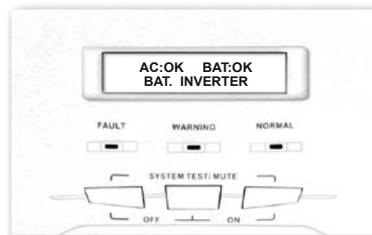
UPS STATUS:

AC utility power fails .The full load is supplied by battery power in UPS. Buzzer alarm sounds every 4 seconds.

ACTION: If AC utility power fails, reduce the less critical load in order to extend backup time. If it is not abnormal power failure, please check the rated input or connected line.

7.LED and LCD status as below:
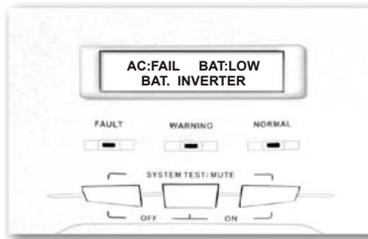
UPS STATUS:

AC utility fails. The load is supplied by UPS in backup mode, and battery power is approaching low level. Buzzer alarm beeps every second.

ACTION: UPS will shut down automatically. Please save data soon.

8.LED and LCD status as below:
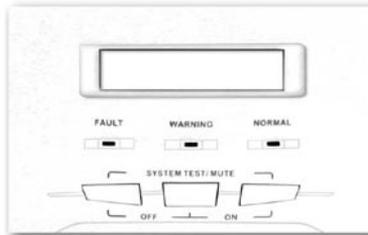
UPS STATUS:

AC utility power fails and battery runs out. UPS has shut down automatically.

ACTION: UPS will restart up when AC utility power is restored. If AC utility power failure is more than 6 hours, please follow storage instruction.

7. OPERATION MODES OF THE UPS

7.1 UPS System Block Diagram
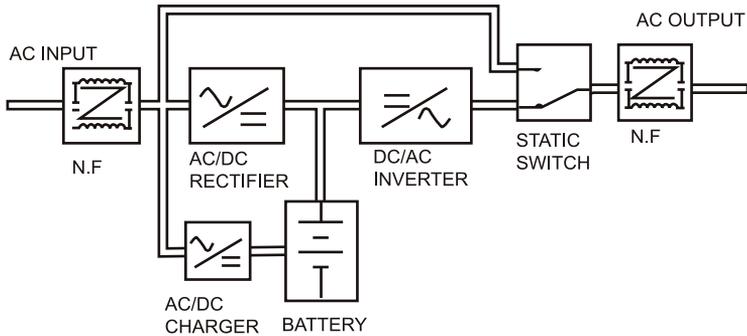
7.2 Normal Operation

There are two main loops when AC utility is normal: the AC loop and the battery charging loop. The AC output power comes from AC utility input and passes through AC/DC rectifier, DC/AC inverter and static switch to support power to load. The battery charging voltage comes from AC utility input and converted by AC/DC charger to support battery-charging power.
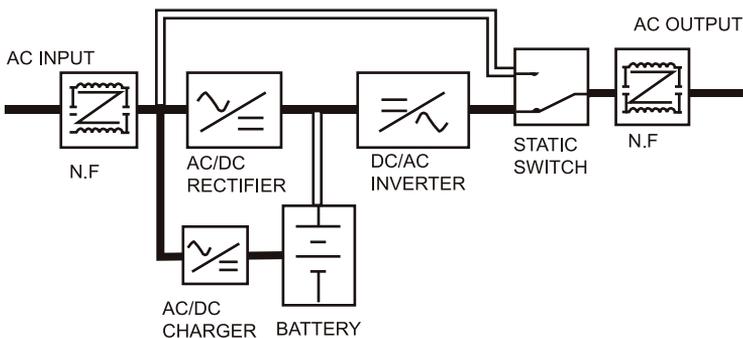
7.3 AC Utility Failure

The AC output comes from battery, passing through DC/AC inverter and static switch within the battery backup time.

AC INPUT

AC OUTPUT

N.F

AC/DC
RECTIFIER

DC/AC
INVERTER

STATIC
SWITCH

N.F

AC/DC
CHARGER
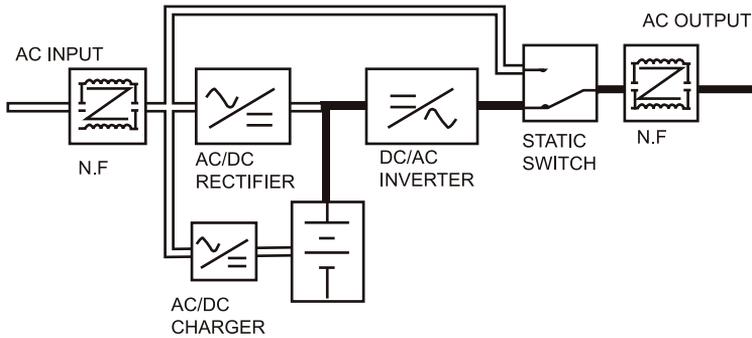
7.4 Bypass Enable

Under the following conditions, the bypass will be enabled:

1.Overload.

2.Inverter failure.

3.Over-temperature

AC INPUT

AC OUTPUT

N.F

AC/DC
RECTIFIER

DC/AC
INVERTER

STATIC
SWITCH

N.F

AC/DC
CHARGER   BATTERY

23
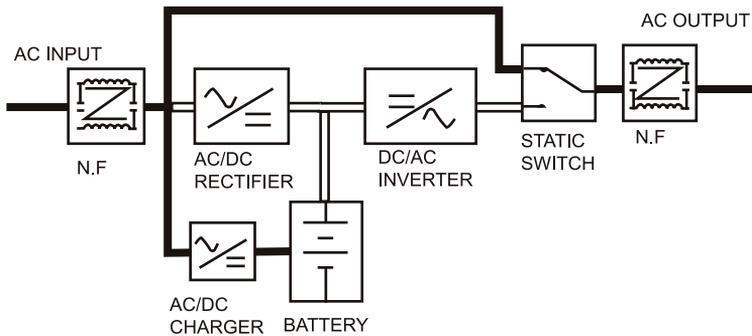
8. COMPUTER INTERFACE

8.1 communication interface

The communication interface (DB9 port) on the back of the UPS may be connected to a host computer. The port provides two different modes for communicating with the computer like below.

1. Supply dry contact function (like RUPS of Megatec Company)

The port simulates relays closing to communicate with the computer. Its major functions are as follows.

    (1) To broadcast a warning when power fails.

    (2) To close any open files before the battery exhausted out.

    (3) To turn off the UPS.

2. Supply RS-232 for monitoring software (like **RUPSII** or **UPSilon 2000** of Megatec Company)

The UPS communicates with the computer by sending out RS-232 data streams to one of the serial ports. By this method the user is able to monitor the following parameters.

Input Voltage	Indicates the present input voltage to the UPS system when AC power is present.
Output Voltage	Indicates the present output voltage of the UPS.
AC Frequency	Indicates the actual output frequency of the UPS.
Battery Voltage	Indicates the present DC voltage of the UPS battery.
Temperature	Indicates the actual temperature inside the UPS.

8.2 DB9 PIN Assignment

PIN 2: RS232 RXD
PIN 3: RS232 TXD
PIN 5: GND
The other PINs have no function.
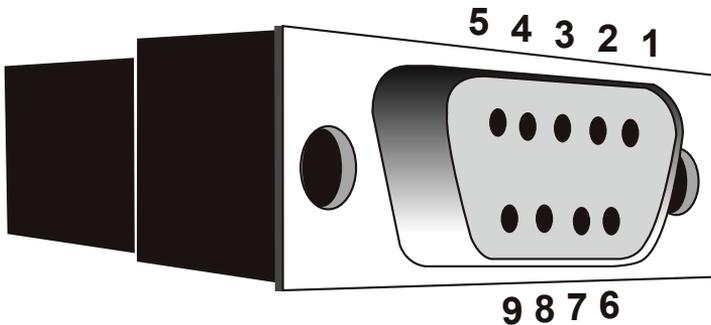
DB9 INTERFACE CONNECTOR

9.SPECIFICATIONS (Tower Case)

Rated Power	Capacity	1KVA / 700W	2KVA / 1400W	3KV/ 2100W
Input	Voltage	Single phase 220Vac, 160~300Vac at 70~100% load 140~300Vac at 50~70% load, 118~300Vac at 0~50% load		
	Frequency	50Hz or 60Hz +/- 4Hz		
	Power Factor	$\geqq$ 0.95	$\geqq$ 0.97	
Output	Voltage, Frequency	Single phase 220Vac +/- 2% (230V or 240V re-settable via LCD panel), 50Hz or 60Hz +/-0.5% (Battery mode)		
	Transient Response	+/- 3% (100% load variation)		
	Waveform / Distortion	Sine wave, THD < 3% at 0-100% linear load		
	Over Load Capacity	125~150% 30sec, then switch to bypass and auto re-transfer; >150% for 200ms		
	Crest Ratio	3 : 1		
Battery	Voltage (longer backup time is available upon request)	7Ah / 12V * 3pcs	7Ah / 12V * 8pcs	
	Recharge Time	5 hrs to 90% of full capacity after full load discharge		
Bypass	Automatic: Overload and UPS failure			
	By setting: Voltage Range 176V~ 253V+/-20V (re-settable via LCD panel)			
Transfer Time	AC fail 0 ms; 2.5ms typical from inverter to bypass and vice versa			
Audible Alarm	Battery Mode	Beeping every 4 seconds (re-settable) and per second when battery low		
	Overload	> 125% Beeping twice per second		
	Fault	Beep Continuously		
Indicator	LCD	UPS status, I/P&O/P voltage& frequency, Battery voltage, Battery capacity, Loading %, Temperature, History record		
	LED	Normal (green), Warning (yellow), Fault (red) LED		
Communications	DB9 Connector	RS-232 Interface; Power monitoring software (Option)		
	SNMP Intelligent Slot	For Net Agent II / Mini (Option) with SNMP manager and Web browser		
Network	Surge Protection	RJ11 I/O port available for 10 base-T network or Fax / Modem		
Environment	Temperature	0-40 degree C; 32-104 degree F		
	Relative Humidity	0-95% non-condensing		
	Acoustic Noise (at 1 M)	< 45 dBA	< 50 dBA	
Physical	Net Weight (w/o batt.)	6.5 kgs	13.5 kgs	14.5 kgs
	Net Weight (w/ batt.)	15 kgs	34 kgs	35 kgs
	Dimension (WxHxD)mm	160 x 220 x 400	200x352x450	200x352x450

※Specifications are subject to change without notice.

9.SPECIFICATIONS (Tower Case)

Rated Power	Capacity	1KVA / 700W	2KVA / 1400W	3KVA / 2100W
Input	Voltage	80-143vac(100%load).65-80vac(70% load), <65vac(<70% load)		
	Frequency	50Hz or 60Hz +/- 4Hz		
	Power Factor	≧ 0.95	≧ 0.97	
Output	Voltage, Frequency	115Vac +/- 2% (115V or 120V re-settable via LCD panel), 50Hz or 60Hz +/-0.5% (Battery mode)		
	Transient Response	+/- 3% (100% load variation)		
	Waveform / Distortion	Sine wave, THD < 3% at 0-100% linear load		
	Over Load Capacity	125~150% 30sec, then switch to bypass and auto re-transfer; >150% for 200ms		
	Crest Ratio	3 : 1		
Battery	Voltage (longer backup time is available upon request)	7Ah / 12V * 3pcs	7Ah / 12V * 8pcs	
	Recharge Time	5 hrs to 90% of full capacity after full load discharge		
Bypass		Automatic: Overload and UPS failure		
		By setting: Voltage Range 176V~ 253V+/-20V (re-settable via LCD panel)		
Transfer Time		AC fail 0 ms; 2.5ms typical from inverter to bypass and vice versa		
Audible Alarm	Battery Mode	Beeping every 4 seconds (re-settable) and per second when battery low		
	Overload	> 125% Beeping twice per second		
	Fault	Beep Continuously		
Indicator	LCD	UPS status, I/P&O/P voltage& frequency, Battery voltage, Battery capacity, Loading %, Temperature, History record		
	LED	Normal (green), Warning (yellow), Fault (red) LED		
Communications	DB9 Connector	RS-232 Interface; Power monitoring software (Option)		
	SNMP Intelligent Slot	For Net Agent II / Mini (Option) with SNMP manager and Web browser		
Network	Surge Protection	RJ11 I/O port available for 10 base-T network or Fax / Modem		
Environment	Temperature	0-40 degree C; 32-104 degree F		
	Relative Humidity	0-95% non-condensing		
	Acoustic Noise (at 1 M)	< 45 dBA	< 50 dBA	
Physical	Net Weight (w/o batt.)	6.5 kgs	13.5 kgs	14.5 kgs
	Net Weight (w/ batt.)	15 kgs	34 kgs	35 kgs
	Dimension (WxHxD)mm	160x220x400	200x352x450	200x352x450

※Specifications are subject to change without notice.

10.SPECIFICATIONS (Rack Mount Case)

Rated Power	Capacity	1KVA / 700W	2KVA / 1400W	3KVA / 2100W
Input	Voltage	Single phase 220Vac, 160~300Vac at 70~100% load 140~300Vac at 50~70% load, 118~300Vac at 0~50% load		
	Frequency	50Hz or 60Hz +/- 4Hz		
	Power Factor	$\geqq$ 0.95	$\geqq$ 0.97	
Output	Voltage, Frequency	Single phase 220Vac +/- 2% (230V or 240V re-settable via LCD panel), 50Hz or 60Hz +/-0.5% (Battery mode)		
	Transient Response	+/- 3% (100% load variation)		
	Waveform / Distortion	Sine wave, THD < 3% at 0-100% linear load		
	Over Load Capacity	125~150% 30sec, then switch to bypass and auto re-transfer; >150% for 200ms		
	Crest Ratio	3 : 1		
Battery	Voltage (longer backup time is available upon request)	7Ah/12V* 3pcs	7Ah / 12V * 8pcs	
	Recharge Time	5 hrs to 90% of full capacity after full load discharge		
Bypass	Automatic: Overload and UPS failure			
	By setting: Voltage Range 176V~ 253V+/-20V (re-settable via LCD panel)			
Transfer Time	AC fail 0 ms; 2.5ms typical from inverter to bypass and vice versa			
Audible Alarm	Battery Mode	Beeping every 4 seconds (re-settable) and per second when battery low		
	Overload	> 125% Beeping twice per second		
	Fault	Beep Continuously		
Indicator	LCD	UPS status, I/P&O/P voltage& frequency, Battery voltage, Battery capacity, Loading %, Temperature, History record		
	LED	Normal (green), Warning (yellow), Fault (red) LED		
Communications	DB9 Connector	RS-232 Interface; Power monitoring software (Option)		
	SNMP Intelligent Slot	For Net Agent II / Mini (Option) with SNMP manager and Web browser		
Network	Surge Protection	RJ11 I/O port available for 10 base-T networkor Fax / Modem		
Environment	Temperature	0-40 degree C; 32-104 degree F		
	Relative Humidity	0-95% non-condensing		
	Acoustic Noise (at 1 M)	<45 dBA	<50 dBA	
Physical	Net Weight (w/o batt.)	8.0 kgs	9.5 kgs	10.5 kgs
	Net Weight (w/ batt.)	15.5 kgs	N/A	N/A
	Dimension (WxHxD)mm	440x88x 465		

※Specifications are subject to change without notice.

10.SPECIFICATIONS (Rack Mount Case)

Rated Power	Capacity	1KVA / 700W	2KVA / 1400W	3KVA / 2100W
Input	Voltage	80-143vac(100%load).65-80vac(70% load), <65vac(<70% load)		
	Frequency	50Hz or 60Hz +/- 4Hz		
	Power Factor	$\geqq 0.95$	$\geqq 0.97$	
Output	Voltage, Frequency	115Vac +/- 2% (115V or 120V re-settable via LCD panel), 50Hz or 60Hz +/-0.5% (Battery mode)		
	Transient Response	+/- 3% (100% load variation)		
	Waveform / Distortion	Sine wave, THD < 3% at 0-100% linear load		
	Over Load Capacity	125~150% 30sec, then switch to bypass and auto re-transfer; >150% for 200ms		
	Crest Ratio	3 : 1		
Battery	Voltage (longer backup time is available upon request)	7Ah / 12V * 3pcs	7Ah / 12V * 8pcs	
	Recharge Time	5 hrs to 90% of full capacity after full load discharge		
Bypass	Automatic: Overload and UPS failure			
	By setting: Voltage Range 176V~ 253V+/-20V (re-settable via LCD panel)			
Transfer Time	AC fail 0 ms; 2.5ms typical from inverter to bypass and vice versa			
Audible Alarm	Battery Mode	Beeping every 4 seconds (re-settable) and per second when battery low		
	Overload	> 125% Beeping twice per second		
	Fault	Beep Continuously		
Indicator	LCD	UPS status, I/P&O/P voltage& frequency, Battery voltage, Battery capacity, Loading %, Temperature, History record		
	LED	Normal (green), Warning (yellow), Fault (red) LED		
Communications	DB9 Connector	RS-232 Interface; Power monitoring software (Option)		
	SNMP Intelligent Slot	For Net Agent II / Mini (Option) with SNMP manager and Web browser		
Network	Surge Protection	RJ11 I/O port available for 10 base-T network or Fax / Modem		
Environment	Temperature	0-40 degree C; 32-104 degree F		
	Relative Humidity	0-95% non-condensing		
	Acoustic Noise (at 1 M)	<45 dBA	<50 dBA	
Physical	Net Weight (w/o batt.)	8.0 kgs	9.5 kgs	10.5 kgs
	Net Weight (w/ batt.)	15.5 kgs	N/A	N/A
	Dimension (WxHxD)mm	440x88x465		

※Specifications are subject to change without notice.